

In the Claims:

Please cancel claims 2, 7, 9-10, 12, 14, 20-21, 26, 29-33, and 36-40 without prejudice, add new claims 41 and 43, and amend claims 1, 3-6, 8, 11, 13, 15-19, 22-25, 27-28, and 34-35 as follows:

1. (Currently Amended) A computer-readable recording medium for storing a computer program for detecting a worm by monitoring a communication of a predetermined network segment that is connected to a network and judging whether the communication is executed by a worm, ~~causes the computer program causing~~ a computer to perform:

acquiring information related to a traffic and a communication address of a communication packet based on setting information;

judging whether the communication is executed by the worm based on the information acquired and a predetermined judgment criteria;

extracting reference information for identifying a communication packet to be blocked from a plurality of communication packets transmitted in the communication upon it being judged at the judging that the communication is executed by the worm; ~~and~~

blocking the communication packet that is transmitted between the predetermined network segment and the outside of the predetermined network segment based on the reference information extracted at the extracting; and

changing the setting information upon it being judged at the judging that the communication is executed by the worm,

wherein the acquiring includes acquiring the information based on the setting information after a change.

2. (Cancelled)

3. (Currently Amended) ~~The computer program according to claim 1, causes the computer to further perform~~A computer-readable recording medium for storing a computer program for detecting a worm by monitoring a communication of a predetermined network segment that is connected to a network and judging whether the communication is executed by a worm, the computer program causing a computer to perform:

acquiring information related to a traffic and a communication address of a communication packet based on setting information;

judging whether the communication is executed by the worm based on the information acquired and a predetermined judgment criteria;

extracting reference information for identifying a communication packet to be blocked from a plurality of communication packets transmitted in the communication upon it being judged at the judging that the communication is executed by the worm;

blocking the communication packet that is transmitted between the predetermined network segment and the outside of the predetermined network segment based on the reference information extracted at the extracting; and

changing the judgment criteria upon it being judged at the judging that the communication is executed by the worm, wherein

the judging includes judging whether the communication is executed by the worm based on the information acquired and the setting information after a change.

4. (Currently Amended) The ~~computer—program~~computer-readable recording medium according to claim 1, wherein the judging includes judging that a communication from a computer that is in the predetermined network segment is executed by the worm when

there is an increase in number of communication packets as well as number of destination addresses of communication packets that are transmitted from the predetermined network segment to the outside.

5. (Currently Amended) ~~The computer program according to claim 4,~~A computer-readable recording medium for storing a computer program for detecting a worm by monitoring a communication of a predetermined network segment that is connected to a network and judging whether the communication is executed by a worm, the computer program causing a computer to perform:

acquiring information related to a traffic and a communication address of a communication packet based on setting information;

judging whether the communication is executed by the worm based on the information acquired and a predetermined judgment criteria;

extracting reference information for identifying a communication packet to be blocked from a plurality of communication packets transmitted in the communication upon it being judged at the judging that the communication is executed by the worm; and

blocking the communication packet that is transmitted between the predetermined network segment and the outside of the predetermined network segment based on the reference information extracted at the extracting,

wherein the judging includes judging that a communication from a plurality of ~~computer~~computers in the predetermined segment is executed by the worm when

a communication from a computer in the predetermined network segment is judged previously to be executed by the worm,~~and~~

there is an increase in number of communication packets that are transmitted from the predetermined network segment to the outside, and

the number of destination addresses of the communication packet that is transmitted from the predetermined network segment to the outside becomes greater than a number of destination addresses of a communication packet acquired when the communication is judged to be executed by the worm, and is transmitted from the predetermined network segment to the outside.

6. (Currently Amended) ~~The computer program according claim~~

~~1. A computer-readable recording medium for storing a computer program for detecting a worm by monitoring a communication of a predetermined network segment that is connected to a network and judging whether the communication is executed by a worm, the computer program causing a computer to perform:~~

~~acquiring information related to a traffic and a communication address of a communication packet based on setting information;~~

~~judging whether the communication is executed by the worm based on the information acquired and a predetermined judgment criteria;~~

~~extracting reference information for identifying a communication packet to be blocked from a plurality of communication packets transmitted in the communication upon it being judged at the judging that the communication is executed by the worm; and~~

~~blocking the communication packet that is transmitted between the predetermined network segment and the outside of the predetermined network segment based on the reference information extracted at the extracting,~~

wherein the judging includes judging that a communication from a computer that is outside the predetermined network segment is executed by the worm when

there is an increase in number of responding communication packets corresponding to communication packets that are transmitted from outside to the predetermined network segment, and

there is an increase in number of sender addresses of the responding communication packets.

7. (Cancelled)

8. (Currently Amended) ~~The computer program according to claim 1,~~  
A computer-readable recording medium for storing a computer program for detecting a worm by monitoring a communication of a predetermined network segment that is connected to a network and judging whether the communication is executed by a worm, the computer program causing a computer to perform:

acquiring information related to a traffic and a communication address of a communication packet based on setting information;

judging whether the communication is executed by the worm based on the information acquired and a predetermined judgment criteria;

extracting reference information for identifying a communication packet to be blocked from a plurality of communication packets transmitted in the communication upon it being judged at the judging that the communication is executed by the worm; and

blocking the communication packet that is transmitted between the predetermined network segment and the outside of the predetermined network segment based on the reference information extracted at the extracting,

wherein the judging includes predicting a type of the worm by comparing features of a communication judged to be executed by a worm with features of a communication executed by a worm that is recorded in advance.

9-10. (Cancelled)

11. (Currently Amended) ~~The computer program according to claim 9,~~  
A computer-readable recording medium for storing a computer program for detecting a worm by monitoring a communication of a predetermined network segment that is connected to a network and judging whether the communication is executed by a worm, the computer program causing a computer to perform:

acquiring information related to a traffic and a communication address of a communication packet based on setting information;

judging whether the communication is executed by the worm based on the information acquired and a predetermined judgment criteria;

extracting reference information for identifying a communication packet to be blocked from a plurality of communication packets transmitted in the communication upon it being judged at the judging that the communication is executed by the worm;

blocking the communication packet that is transmitted between the predetermined network segment and the outside of the predetermined network segment based on the reference information extracted at the extracting; and

cutting off the communication executed by the worm upon it being judged that the communication is executed by the worm,

wherein the cutting off includes cutting off the communication executed by the worm by making a fire wall function effective in a computer that is judged to have a worm.

12. (Cancelled)

13. (Currently Amended) A method for detecting a worm by monitoring a communication of a predetermined network segment that is connected to a network and judging whether the communication is executed by a worm, comprising:

acquiring information related to a traffic and a communication address of a communication packet based on setting information;

judging whether the communication is executed by the worm based on the information acquired and a predetermined judgment criteria; and

extracting reference information for identifying a communication packet to be blocked from a plurality of communication packets transmitted in the communication upon it being judged at the judging that the communication is executed by the worm; and



blocking the communication packet that is transmitted between the predetermined network segment and the outside of the predetermined network segment based on the reference information extracted at the extracting; and

changing the setting information upon it being judged at the judging that the communication is executed by the worm,

wherein the acquiring includes acquiring the information based on the setting information after a change.

14. (Cancelled)

15. (Currently Amended) ~~The device according to claim 14, further comprising~~A device for detecting a worm by monitoring a communication of a predetermined network segment that is connected to a network and judging whether the communication is executed by a worm, comprising:

an acquiring unit that acquires information related to a traffic and a communication address of a communication packet based on setting information;

a judging unit that judges whether the communication is executed by the worm based on the information acquired and a predetermined judgment criteria;

a reference information extracting unit that extracts reference information for identifying a communication packet to be blocked from a plurality of communication

packets transmitted in the communication upon it being judged by the judging unit that the communication is executed by the worm;

a blocking unit that blocks the communication packet that is transmitted between the predetermined network segment and the outside of the predetermined network segment based on the reference information extracted by the reference information extracting unit; and

a setting changing unit that changes the setting information upon it being judged by the judging unit that the communication is executed by the worm, wherein

the acquiring unit acquires the information based on the setting information after a change.

16. (Currently Amended) ~~The device according to claim 14, further comprising~~A device for detecting a worm by monitoring a communication of a predetermined network segment that is connected to a network and judging whether the communication is executed by a worm, comprising:

an acquiring unit that acquires information related to a traffic and a communication address of a communication packet based on setting information;

a judging unit that judges whether the communication is executed by the worm based on the information acquired and a predetermined judgment criteria;

a reference information extracting unit that extracts reference information for identifying a communication packet to be blocked from a plurality of communication

packets transmitted in the communication upon it being judged by the judging unit that the communication is executed by the worm;

a blocking unit that blocks the communication packet that is transmitted between the predetermined network segment and the outside of the predetermined network segment based on the reference information extracted by the reference information extracting unit; and

a setting changing unit that changes the judgment criteria upon it ~~is~~ being judged by the judging unit that the communication is executed by the worm, wherein

the judging unit judges whether the communication is executed by the worm based on the information acquired by the acquiring unit and the setting information after a change.

17. (Currently Amended) The device according to ~~claim 14~~ claim 15, wherein the judging unit judges that a communication from a computer that is in the predetermined network segment is executed by the worm when

there is an increase in number of communication packets as well as number of destination addresses of communication packets that are transmitted from the predetermined network segment to the outside.

18. (Currently Amended) ~~The device according to claim 17,~~ A device for detecting a worm by monitoring a communication of a predetermined network segment

that is connected to a network and judging whether the communication is executed by a worm, comprising:

an acquiring unit that acquires information related to a traffic and a communication address of a communication packet based on setting information;

a judging unit that judges whether the communication is executed by the worm based on the information acquired and a predetermined judgment criteria;

a reference information extracting unit that extracts reference information for identifying a communication packet to be blocked from a plurality of communication packets transmitted in the communication upon it being judged by the judging unit that the communication is executed by the worm;

a blocking unit that blocks the communication packet that is transmitted between the predetermined network segment and the outside of the predetermined network segment based on the reference information extracted by the reference information extracting unit,

wherein the judging unit judges that a communication from a plurality of computers in the predetermined segment is executed by the worm when

a communication from a computer in the predetermined network segment is judged previously to be executed by the worm, ~~and~~

there is an increase in number of communication packets that are transmitted from the predetermined network segment to the outside, and

the number of destination addresses of the communication packet that is transmitted from the predetermined network segment to the outside becomes greater than a number of destination addresses of a communication packet acquired when the communication is judged to be executed by the worm, and is transmitted from the predetermined network segment to the outside.

19. (Currently Amended) ~~The device according to claim 14,~~A device for detecting a worm by monitoring a communication of a predetermined network segment that is connected to a network and judging whether the communication is executed by a worm, comprising:

an acquiring unit that acquires information related to a traffic and a communication address of a communication packet based on setting information;

a judging unit that judges whether the communication is executed by the worm based on the information acquired and a predetermined judgment criteria;

a reference information extracting unit that extracts reference information for identifying a communication packet to be blocked from a plurality of communication packets transmitted in the communication upon it being judged by the judging unit that the communication is executed by the worm; and

a blocking unit that blocks the communication packet that is transmitted between the predetermined network segment and the outside of the predetermined

network segment based on the reference information extracted by the reference information extracting unit,

wherein the judging unit judges that a communication from a computer that is outside the predetermined network segment is executed by the worm when

there is an increase in number of responding communication packets corresponding to communication packets that are transmitted from outside to the predetermined network segment, and

there is an increase in number of sender addresses of the responding communication packets.

20-21. (Cancelled)

22. (Currently Amended) ~~The computer-readable medium according to claim 12,~~A computer-readable recording medium for storing a computer program for detecting a worm by monitoring a communication of a predetermined network segment that is connected to a network and judging whether the communication is executed by a worm, the computer program causing a computer to perform:

acquiring information related to a traffic and a communication address of a communication packet based on setting information;

judging whether the communication is executed by the worm based on the information acquired and a predetermined judgment criteria;

extracting reference information for identifying a communication packet to be blocked from a plurality of communication packets transmitted in the communication upon it being judged at the judging that the communication is executed by the worm; and

blocking the communication packet that is transmitted between the predetermined network segment and the outside of the predetermined network segment based on the reference information extracted at the extracting,

wherein the extracting includes summing up a number of the communication packets for each port number, the communication packets being transmitted in the communication upon it being judged that the communication is executed by the worm at the judging, and extracting as the reference information, a most frequently appeared port number of the communication packets transmitted in the communication upon it being judged that the communication is executed by the worm at the judging.

23. (Currently Amended) ~~The method of claim 13,~~A method for detecting a worm by monitoring a communication of a predetermined network segment that is connected to a network and judging whether the communication is executed by a worm, comprising:

acquiring information related to a traffic and a communication address of a communication packet based on setting information;

judging whether the communication is executed by the worm based on the information acquired and a predetermined judgment criteria;

extracting reference information for identifying a communication packet to be blocked from a plurality of communication packets transmitted in the communication upon it being judged at the judging that the communication is executed by the worm; and

blocking the communication packet that is transmitted between the predetermined network segment and the outside of the predetermined network segment based on the reference information extracted at the extracting,

wherein the extracting includes summing up a number of the communication packets for each port number, the communication packets being transmitted in the communication upon it being judged that the communication is executed by the worm at the judging, and extracting as the reference information, a most frequently appeared port number of the communication packets transmitted in the communication upon it being judged that the communication is executed by the worm at the judging.

24. (Currently Amended) ~~The device according to claim 14,~~A device for detecting a worm by monitoring a communication of a predetermined network segment that is connected to a network and judging whether the communication is executed by a worm, comprising:



an acquiring unit that acquires information related to a traffic and a communication address of a communication packet based on setting information;

a judging unit that judges whether the communication is executed by the worm based on the information acquired and a predetermined judgment criteria;

a reference information extracting unit that extracts reference information for identifying a communication packet to be blocked from a plurality of communication packets transmitted in the communication upon it being judged by the judging unit that the communication is executed by the worm; and

a blocking unit that blocks the communication packet that is transmitted between the predetermined network segment and the outside of the predetermined network segment based on the reference information extracted by the reference information extracting unit,

wherein the reference information extracting unit sums up a number of the communication packets for each port number, the communication packets being transmitted in the communication upon it being judged that the communication is executed by the judging unit, and extracts, as the reference information, a most frequently appeared port number of the communication packets transmitted in the communication upon it being judged that the communication is executed by the judging unit.

25. (Currently Amended) ~~The computer program according to claim 1,~~  
A computer-readable recording medium for storing a computer program for detecting a

worm by monitoring a communication of a predetermined network segment that is connected to a network and judging whether the communication is executed by a worm, the computer program causing a computer to perform:

acquiring information related to a traffic and a communication address of a communication packet based on setting information;

judging whether the communication is executed by the worm based on the information acquired and a predetermined judgment criteria;

extracting reference information for identifying a communication packet to be blocked from a plurality of communication packets transmitted in the communication upon it being judged at the judging that the communication is executed by the worm;

blocking the communication packet that is transmitted between the predetermined network segment and the outside of the predetermined network segment based on the reference information extracted at the extracting,

wherein the extracting further includes summing up, for each type of the communication— direction of communication of a packet transmitted out from the predetermined network segment or transmitted to the predetermined network segment, a number of the communication packets transmitted in the communication upon it being judged that the communication is executed by the worm at the judging, and extracting, as the reference information, a-type direction of the communication wherein the number of the communication packets is over a threshold value.

26. (Cancelled)

27. (Currently Amended) ~~The method of claim 13,~~A method for detecting a worm by monitoring a communication of a predetermined network segment that is connected to a network and judging whether the communication is executed by a worm, comprising:

acquiring information related to a traffic and a communication address of a communication packet based on setting information;

judging whether the communication is executed by the worm based on the information acquired and a predetermined judgment criteria;

extracting reference information for identifying a communication packet to be blocked from a plurality of communication packets transmitted in the communication upon it being judged at the judging that the communication is executed by the worm; and

blocking the communication packet that is transmitted between the predetermined network segment and the outside of the predetermined network segment based on the reference information extracted at the extracting,

wherein the extracting further includes summing up, for each type of the communication direction of communication of a packet transmitted out from the predetermined network segment or transmitted to the predetermined network segment, a number of the communication packets transmitted in the communication upon it being judged that the communication is executed by the worm at the judging, and extracting, as

the reference information, a ~~type~~ direction of the communication wherein the number of the communication packets is over a threshold value.

28. (Currently Amended) ~~The device according to claim 14,~~ A device for detecting a worm by monitoring a communication of a predetermined network segment that is connected to a network and judging whether the communication is executed by a worm, comprising:

an acquiring unit that acquires information related to a traffic and a communication address of a communication packet based on setting information;

a judging unit that judges whether the communication is executed by the worm based on the information acquired and a predetermined judgment criteria;

a reference information extracting unit that extracts reference information for identifying a communication packet to be blocked from a plurality of communication packets transmitted in the communication upon it being judged by the judging unit that the communication is executed by the worm; and

a blocking unit that blocks the communication packet that is transmitted between the predetermined network segment and the outside of the predetermined network segment based on the reference information extracted by the reference information extracting unit,

wherein the reference information extracting unit further sums up, for each ~~type of the communication~~ direction of communication of a packet transmitted out from

the predetermined network segment or transmitted to the predetermined network segment, a number of the communication packets transmitted in the communication upon it being judged that the communication is executed by the judging unit, and extracts, as the reference information, a ~~type~~ direction of the communication wherein the number of the communication packets is over a threshold value.

29-33. (Cancelled)

34. (Currently Amended) ~~The device according to claim 33;~~ A device for cutting off a communication executed by a worm by monitoring the communication between a predetermined network segment and outside of the predetermined network segment, comprising:

a worm judging unit that judges whether a communication is executed by the worm;

a reference information extracting unit that extracts reference information for identifying a communication packet to be blocked from a plurality of communication packets transmitted in the communication upon it being judged by the worm judging unit that the communication is executed by the worm; and

a blocking unit that blocks the communication packet that is transmitted between the predetermined network segment and the outside of the predetermined

network segment based on the reference information extracted by the reference information extracting unit,

wherein the reference information extracting unit sums up a number of the communication packets for each port number, the communication packets being transmitted in the communication upon it being judged that the communication is executed by the worm judging unit, and extracts, as the reference information, a most frequently appearing port number of the communication packets transmitted in the communication upon it being judged by the worm judging unit that the communication is executed by the worm.

35. (Currently Amended) ~~The device according to claim 33,~~A device for cutting off a communication executed by a worm by monitoring the communication between a predetermined network segment and outside of the predetermined network segment, comprising:

a worm judging unit that judges whether a communication is executed by the worm;

a reference information extracting unit that extracts reference information for identifying a communication packet to be blocked from a plurality of communication packets transmitted in the communication upon it being judged by the worm judging unit that the communication is executed by the worm; and

a blocking unit that blocks the communication packet that is transmitted between the predetermined network segment and the outside of the predetermined network segment based on the reference information extracted by the reference information extracting unit,

wherein the reference information extracting unit further sums up, for each ~~type of the communication~~ direction of communication of a packet transmitted out from the predetermined network segment or transmitted to the predetermined network segment, a number of the communication packets transmitted in the communication upon it being judged by the worm judging unit that the communication is executed by the worm, and extracts, as the reference information, a ~~type~~ direction of the communication wherein the number of the communication packets is over a threshold value.

36-40. (Cancelled)

41. (New) The computer-readable recording medium according to claim 3, wherein the judging includes judging that a communication from a computer that is in the predetermined network segment is executed by the worm when

there is an increase in number of communication packets as well as number of destination addresses of communication packets that are transmitted from the predetermined network segment to the outside.

42. (New) The computer-readable recording medium according to claim 6, wherein the judging includes judging that a communication from a computer that is in the predetermined network segment is executed by the worm when

there is an increase in number of communication packets as well as number of destination addresses of communication packets that are transmitted from the predetermined network segment to the outside.

43. (New) The computer-readable recording medium according to claim 8, wherein the judging includes judging that a communication from a computer that is in the predetermined network segment is executed by the worm when

there is an increase in number of communication packets as well as number of destination addresses of communication packets that are transmitted from the predetermined network segment to the outside.